



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Keith V. Wood et al.

**SYNTHETIC NUCLEIC ACID MOLECULE COMPOSITIONS AND METHODS OF  
PREPARATION**

Docket No.: 341.005US1

Serial No.: 09/645,706 ✓

Filed: August 24, 2000

Due Date: N/A

Examiner: Rebecca E. Prouty

Group Art Unit: 1652

**MS Amendment**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

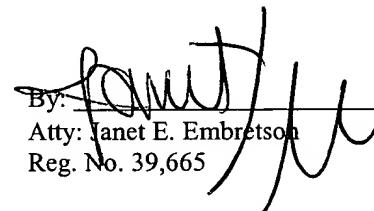
We are transmitting herewith the following attached items (as indicated with an "X"):

- Return postcard.
- Information Disclosure Statement (2 pgs.), Form 1449 (10 pgs.), and copies of 137 cited documents.
- Check in the amount of \$180.00 to cover the fee for consideration of Information Disclosure Statement under 1.97(c).

If not provided for in a separate paper filed herewith, Please consider this a PETITION FOR EXTENSION OF TIME for sufficient number of months to enter these papers and please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.

Customer Number 21186

By:   
Atty: Janet E. Embretson  
Reg. No. 39,665

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 7 day of July, 2006.

JAMES KAVYUSIK  
Name

Janet Embretson  
Signature

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.

(GENERAL)

S/N 09/645,706



PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Keith V. Wood et al. Examiner: Rebecca E. Prouty  
Serial No.: 09/645,706 Group Art Unit: 1652  
Filed: August 24, 2000 Docket: 341.005US1  
Title: SYNTHETIC NUCLEIC ACID MOLECULE COMPOSITIONS AND METHODS  
OF PREPARATION

---

**INFORMATION DISCLOSURE STATEMENT**

MS Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with 37 C.F.R. §§ 1.97 *et. seq.*, the enclosed materials are brought to the attention of the Examiner for consideration in connection with the above-identified patent application. Applicant respectfully requests that this Information Disclosure Statement be entered and the documents listed on the attached Form 1449 be considered by the Examiner and made of record. Pursuant to the provisions of MPEP 609, Applicant requests that a copy of the 1449 form, initialed as being considered by the Examiner, be returned to the Applicant with the next official communication.

Pursuant to 37 C.F.R. § 1.97(c)(2), Applicant has included the fee of \$180.00 as set forth in 37 C.F.R. § 1.17(p). Please charge any additional fees or credit any overpayment to Deposit Account No. 19-0743.

07/11/2006 RMEBRAHT 00000065 09645706

01 FC:1806

180.00 0P

Pursuant to 37 C.F.R. 1.98(a)(2), Applicant believes that copies of cited U.S. Patents and Published Applications, and Non-Published Applications identifiable by USPTO Serial Number, are no longer required to be provided to the Office. Notification to this effect was provided in the United States Patent and Trademark Office OG Notices dated October 12, 2004 and October 19, 2004. Thus, Applicant has not included copies of any US Patents or US Patent Applications identifiable by serial number that may be cited with this submission. Should the Office require copies to be provided, Applicant respectfully requests that notice of such requirement be directed to Applicant's below-signed representative. Applicant acknowledges the requirement to submit copies of foreign patent documents and non-patent literature in accordance with 37 C.F.R. 1.98(a)(2).

The Examiner is invited to contact the Applicant's Representative at the below-listed telephone number if there are any questions regarding this communication.

Respectfully submitted,

KEITH V. WOOD ET AL.

By their Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
P.O. Box 2938  
Minneapolis, MN 55402  
(612) 373-6959

Date

JULY 6, 2006

By

Janet E. Embretson  
Reg. No. 39,665

**CERTIFICATE UNDER 37 CFR 1.8:** The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 6<sup>th</sup> day of July, 2006.

Name

JAMES KAYROSK

Signature

James Kayrosk

Substitute for form 1449A/PTO  
**INFORMATION DISCLOSURE  
 STATEMENT BY APPLICANT**  
 Use as many sheets as necessary)

Sheet 1 of 10

Complete if Known

<b>Application Number</b>	09/645,706
<b>Filing Date</b>	August 24, 2000
<b>First Named Inventor</b>	Wood, Keith
<b>Group Art Unit</b>	1652
<b>Examiner Name</b>	Prouty, Rebecca

Attorney Docket No: 341.005US1

**US PATENT DOCUMENTS**

Examiner Initial *	USP Document Number	Publication Date	Name of Patentee or Applicant of cited Document	Filing Date If Appropriate
	US-2003/0157643A1	08/21/2003	Almond, B. D., et al.	12/09/2002
	US-2006/0127988A1	06/15/2006	Wood, K. V., et al.	12/22/2005
	US-4,246,340	01/20/1981	Lundin, A. T., et al.	05/30/1979
	US-4,412,001	10/25/1983	Baldwin, T. O., et al.	12/03/1981
	US-4,503,142	03/05/1985	Berman, M. L., et al.	06/25/1982
	US-4,581,335	04/08/1986	Baldwin, T. O., et al.	12/01/1982
	US-5,106,732	04/21/1992	Kondo, K., et al.	02/14/1990
	US-5,168,062	12/01/1992	Stinski, M. F.	09/10/1990
	US-5,196,524	03/23/1993	Gustafson, G. D., et al.	01/06/1989
	US-5,221,623	06/22/1993	Legocki, R. P., et al.	07/19/1989
	US-5,605,793	02/25/1997	Stemmer, W. P.	02/17/1994
	US-5,618,682	04/08/1997	Scheirer, W.	02/08/1994
	US-5,629,168	05/13/1997	Kricka, Larry J.	06/07/1995
	US-5,744,307	04/28/1998	Kuroda, N., et al.	09/12/1995
	US-5,814,471	09/29/1998	Wood, K. V.	04/09/1997
	US-6,602,677	08/05/2003	Wood, K. V., et al.	98/15/1999

**FOREIGN PATENT DOCUMENTS**

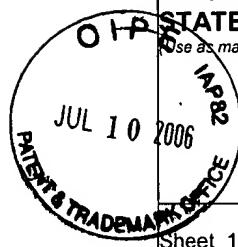
Examiner Initials*	Foreign Document No	Publication Date	Name of Patentee or Applicant of cited Document	T <sup>2</sup>
	EP-0337349A2	10/18/1989	Kajiyama, N., et al.	
	EP-0364707A1	04/25/1990	Tatsumi, H., et al.	
	EP-0437013A2	07/17/1991	Smith, D. F., et al.	
	EP-0449621A1	10/02/1991	Kajiyama, N.	
	EP-0524448A1	01/27/1993	Kajiyama, N., et al.	
	EP-0353464B1	10/20/1993	Tatsumi, H., et al.	
	JP-03-167288	07/19/1991	Inoue, S.	✓
	JP-07-067696 (w/ English Abstract)	03/14/1995	Yoshitami, M., et al.	
	JP-09-294600 (w/ English Abstract)	11/18/1997	Tatsumi, H., et al.	
	JP-10-87621	04/07/1998	Masako, M.	✓
	WO-90/01542A1	02/22/1990	Kazami, J., et al.	
	WO-91/16432A1	10/31/1991	Cornelissen, M., et al.	
	WO-92/15673A1	09/17/1992	Cormier, M. J., et al.	
	WO-95/18853A1	07/13/1995	Wood, K. V., et al.	
	WO-9726333A1	07/24/1997	Zolotukhin, S., et al.	
	WO-98/13487A1	04/02/1998	Stemmer, W. P., et al.	
	WO-98/46729A2	10/22/1998	Squirrell, D., et al.	

**EXAMINER**

**DATE CONSIDERED**

Substitute Disclosure Statement Form (PTO-1449)

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 608. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional) 2 Applicant is to place a check mark here if English language Translation is attached



<p>Substitute for form 1449A/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (Use as many sheets as necessary)</p>		<i>Complete if Known</i>	
		<b>Application Number</b>	09/645,706
		<b>Filing Date</b>	August 24, 2000
		<b>First Named Inventor</b>	Wood, Keith
		<b>Group Art Unit</b>	1652
		<b>Examiner Name</b>	Prouty, Rebecca
Sheet 2 of 10		Attorney Docket No: 341.005US1	

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		"Dual-Luciferase™ Reporter Assay System", (1998), 2 pgs.	
		"Luciferase Reporter Gene Technology", (1996), 4 pgs.	
		"Promega Technical Bulletin No. 161 - Luciferase Assay System With Reporter Lysis Buffer", (March, 1998), 9 pgs.	
		"Promega Technical Bulletin No. 101- Luciferase Assay System", (March, 1998), 9 pgs.	
		"Promega Technical Manual - Dual-Luciferase™ Reporter Assay System", (February, 1999), 26 pgs.	
		"Promega Technical Manual - Steady-Glo™ Luciferase Assay System", (October, 1998), 19 pgs.	
		"Steady-Glo™ Luciferase Assay System", (1998), 2 pgs.	
		"TESS – Filtered String Search Page", <a href="http://www.cbil.upenn.edu/cgi-bin/tess/tess?RQ=SEA-FR-QueryF">http://www.cbil.upenn.edu/cgi-bin/tess/tess?RQ=SEA-FR-QueryF</a> , (June, 2006)	
		ALAM, J., et al., "Reporter Genes: Application to the Study of Mammalian Gene Transcription", <u>Analytical Biochemistry</u> , 188(2), (1990), 245-254	
		ANDREWS, E. M., et al., "Hierarchy of Polyadenylation Site Usage by Bovine Papillomavirus in Transformed Mouse Cells", <u>Journal of Virology</u> , 67(12), (December, 1993), 7705-7710	
		ARNOLD, F. H., "Directed Evolution: Creating Biocatalysts for the Future", <u>Chemical Engineering Science</u> , 51, (1996), 5091-5102	
		BACHMAIR, A., "In Vivo Half-Life of a Protein is a Function of its Amino Terminal Residue", <u>Science</u> , 234(4773), (1986), 179-186	
		BONIN, A. L., "Photinus pyralis Luciferase: Vectors that Contain a Modified <i>luc</i> Coding Sequence Allowing Convenient Transfer into Other Systems", <u>Gene</u> , 141(1), (1994), 75-77	
		BOROVKOV, A. Y., et al., "XcmI-containing Vector for Direct Cloning of PCR Products," <u>BioTechniques</u> , 22(5), (May, 1997), 812-814	
		BOTHWELL, A. L., et al., "Heavy Chain Variable Region Contribution to the NP <sup>b</sup> Family of Antibodies: Somatic Mutation Evident in a γ2a Variable Region", <u>Cell</u> , 24(3), (June, 1981), 625-637	
		BOUTHORS, A.-T., "Site-Directed Mutagenesis of Residues 164, 170, 171, 179, 220, 237 and 242 in PER-1 β-lactamase Hydrolysing Expanded-Spectrum Cephalosporins", <u>Protein Engineering</u> , 12(4), (1999), 313-318	
		BOWIE, J U., et al., "Deciphering the Message in Protein Sequences: Tolerance to Amino Acid Substitutions", <u>Science</u> , 247(4948), (March 16, 1990), 1306-1310	
		BRANCHINI, B. R., et al., "Naphthyl- and Quinolyl Luciferin: Green and Red Light Emitting Firefly Luciferin Analogues", <u>Photochemistry and Photobiology</u> , 49(5), (1989), 689-695	
		BRONSTEIN, I. et al., "Chemiluminescent and Bioluminescent Reporter Gene Assays", <u>Analytical Biochemistry</u> , 219(2), (1994), 169-181	

EXAMINER

DATE CONSIDERED

Substitute for form 1449A/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(Use as many sheets as necessary)</i>		<i>Complete if Known</i>	
		<b>Application Number</b>	09/645,706
		<b>Filing Date</b>	August 24, 2000
		<b>First Named Inventor</b>	Wood, Keith
		<b>Group Art Unit</b>	1652
		<b>Examiner Name</b>	Prouty, Rebecca
Sheet 3 of 10		Attorney Docket No: 341.005US1	

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		CADWELL, R. C., et al., "Randomization of Genes by PCR Mutagenesis", <u>PCR Methods and Applications</u> , 2, (1992), 28-33	
		CARSWELL, S., et al., "Efficiency of Utilization of the Simian Virus 40 Late Polyadenylation Site: Effects of Upstream Sequences", <u>Molecular and Cellular Biology</u> , 9(10), (1989), 4248-4258	
		CHEN, C.-Y. A, "Interplay of Two Functionally and Structurally Distinct Domains of the c-fos AU-Rich Element Specifies Its mRNA-Destabilizing Function", <u>Molecular and Cellular Biology</u> , 14(1), (January, 1994), 416-426	
		DE WET, J. R., "Cloning of Firefly Luciferase cDNA and the Expression of Active Luciferase in <i>Escherichia coli</i> ", <u>Proc. Natl. Acad. Sci. USA</u> , 82, (1985), 7870-7873	
		DE WET, J. R., "Firefly Luciferase Gene: Structure and Expression in Mammalian Cells", <u>Molecular and Cellular Biology</u> , 7(2), (1987), 725-737	
		DELUCA, M., et al., "Role of Sulfhydryl Groups in Firefly Luciferase", <u>Biochemistry</u> , 3(7), (1964), 935-939	
		DELUCA, M., et al., "The Hydrolase Properties of Firefly Luciferase", <u>Biochemical and Biophysical Research Communications</u> , 18(5-6), (1965), 836-842	
		DELUCA, M., et al., "The Role of 1,N <sup>6</sup> -Ethenoadenosine Triphosphate and 1, N <sup>6</sup> -Ethenoadenosine", <u>Proc. Natl. Acad. Sci. USA</u> , 70(6), (1973), 1664-1666	
		DEMENTIEVA, E. I., "Physicochemical Properties of Recombinant <i>Luciola mingrellica</i> Luciferase and its Mutant Forms", <u>Biochemistry</u> , 61 (1), (1996), 115-119	
		FARR, A., et al., "A Pitfall of Using a Second Plasmid to Determine Transfection Efficiency", <u>Nucleic Acids Research</u> , 20(4), (February 25, 1992), Page 920	
		FLEER, R., "High-Level Secretion of Correctly Processed Recombinant Human interleukin-1 $\beta$ in <i>Kluyveromyces lactis</i> ", <u>Gene</u> , 107(2), (1991), 285-295	
		FORD, S. R., et al., "Enhancement of Firefly Luciferase Activity by Cytidine Nucleotides", <u>Analytical Biochemistry</u> , 204(2), (1992), 283-291	
		FRAMPTON, J., et al., "Synergy Between the NF-E1 Erythroid-Specific Transcription Factor and the CACCC Factor in the Erythroid-Specific Promoter of the Human Porphobilinogen Deaminase Gene", <u>Molecular and Cellular Biology</u> , 10(7), (July, 1990), 3838-3842	
		FROMANT, M, et al., "Direct Random Mutagenesis of Gene-Sized DNA Fragments Using Polymerase Chain Reaction", <u>Analytical Biochemistry</u> , 224, (1995), 347-353	
		GLUZMAN, Y., "SV40-Transformed Cells Support the Replication of Early SV40 Mutants", <u>Cell</u> , 23(1), (January, 1981), 175-182	
		GOULD, S. J., "A Conserved Tripeptide Sorts Proteins to Peroxisomes", <u>The Journal of Cell Biology</u> , 108, (1989), 1657-1664	

EXAMINER

DATE CONSIDERED

Substitute for form 1449A/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(Use as many sheets as necessary)</i>		<i>Complete if Known</i>	
		<b>Application Number</b>	09/645,706
		<b>Filing Date</b>	August 24, 2000
		<b>First Named Inventor</b>	Wood, Keith
		<b>Group Art Unit</b>	1652
		<b>Examiner Name</b>	Prouty, Rebecca
Sheet 4 of 10		Attorney Docket No: 341.005US1	

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		GOULD, S. J., "Antibodies Directed Against the Peroxisomal Targeting Signal of Firefly Luciferase Recognize Multiple Mammalian Peroxisomal Proteins", <u>The Journal of Cell Biology</u> , 110, (1990), 27-34	
		GOULD, S. J., et al., "Firefly Luciferase as a Tool in Molecular and Cell Biology", <u>Analytical Biochemistry</u> , 175, (1988), 5-13	
		GOULD, S. J., "Identification and Characterization of a Peroxisomal Targeting Signal", <u>Dissertation Abstracts International</u> , Vol. 50/07-B, (1989), 2 pgs.	
		HANAHAN, D., "Chapter 4 - Techniques for Transformation of <i>E. coli</i> ", In: <u>DNA Cloning: A Practical Approach</u> , Volume 1, Chapter 6, Glover, D.W., (Editor), IRL Press, Oxford,(1985), 109-135	
		HASTINGS, J. W., "Biological Diversity, Chemical Mechanisms, and the Evolutionary Origins of Bioluminescent Systems", <u>Journal of Molecular Evolution</u> , 19(3/4), (1983),309-321	
		HÖFTE, H., et al., "Structural and Functional Analysis of a Cloned Delta Endotoxin of <i>Bacillus thuringiensis Berliner</i> 1715", <u>European Journal of Biochemistry</u> , 161, (1986), 273-280	
		HOLCIK, M., et al., "Four Highly Stable Eukaryotic mRNAs Assemble 3' Untranslated Region RNA-Protein Complexes Sharing cis and Trans Components", <u>Proc. Natl. Acad. Sci. USA</u> , 94, (March, 1997), 2410-2414	
		HSIEH, C.-J., "Nucleotide Sequence, Transcriptional Analysis, and Glucose Regulation of the Phenoxazinone Synthase Gene ( <i>phasA</i> ) from <i>Streptomyces antibioticus</i> ", <u>Journal of Bacteriology</u> , 177(20), (October, 1995), 5740-5747	
		JANOWSKI, M., "Ras Proteins and the ras-Related Signal Transduction Pathway", <u>Radiation and Environmental Biophysics</u> , 30(3), (1991), 185-189	
		JENSEN, P. R., et al., "The Sequence of Spacers Between the Consensus Sequences Modulates the Strength of Prokaryotic Products", <u>Applied and Environmental Microbiology</u> , 64(1), (January, 1998), 82-87	
		JOHNSON, L R., "Role of the Transcription Factor Sox-2 in the Expression of the FGF-4 Gene in Embryonal Carcinoma Cells", <u>Molecular Reproduction and Development</u> , 50(4), (1998), 377-386	
		JONES, P L., "Tumor Necrosis Factor Alpha and Interleukin-1 $\beta$ Regulate the Murine Manganese Superoxide Dismutase Gene Through a Complex Intronic Enhancer Involving C/EBP- $\beta$ and NF- $\kappa$ B", <u>Molecular and Cellular Biology</u> , 17(12), (1997), 6970-6981	
		KAJIYAMA, N., et al., "Enhancement of Thermostability of Firefly Luciferase from <i>Luciola lateralis</i> by a Single Amino Acid Substitution", <u>Bioscience, Biotechnology, and Biochemistry</u> , 58(6), (June 1994), 1170-1171	
		KAJIYAMA, N., et al., "Isolation and Characterization of Mutants of Firefly Luciferase Which Produce Different Colors of Light", <u>Protein Engineering</u> , 4(6), (August 1991), 691-693	

EXAMINER

DATE CONSIDERED

Substitute for form 1449A/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(Use as many sheets as necessary)</i>		<i>Complete if Known</i> <b>Application Number</b> 09/645,706 <b>Filing Date</b> August 24, 2000 <b>First Named Inventor</b> Wood, Keith <b>Group Art Unit</b> 1652 <b>Examiner Name</b> Prouty, Rebecca	
Sheet 5 of 10		Attorney Docket No: 341.005US1	

## OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		KAJIYAMA, N, et al., "Thermostabilization of Firefly Luciferase by a Single Amino Acid Substitution at Position 217", <u>Biochemistry</u> , 32(50), (December 21, 1993), 13795-13799	
		KAO, R. , et al., "Single Amino Acid Substitutions Affecting the Specificity of the Fungal Ribotoxin Mitogillin", <u>FEBS Letters</u> , 466(1), (January 21, 2001), 87-90	
		KAY, S. A., et al., "Video Imaging of Regulated Firefly Luciferase Activity in Transgenic Plants and <i>Drosophila</i> ", <u>Promega Notes Magazine</u> , 49, (1994), 7 pgs.	
		KUPRASH, D V., "Conserved κB Element Located Downstream of the Tumor Necrosis Factor $\alpha$ Gene: Distinct NF-κB Binding Pattern and Enhancer Activity in LPS Activated Murine Macrophages", <u>Oncogene</u> , 11(1), (1995), 97-106	
		KUTUZOVA, G. D., et al., "Bioluminescence Color Variation and Kinetic Behavior Relationships Among Beetle Luciferases", <u>Bioluminescence and Chemiluminescence, Molecular Reporting with Photons</u> , J W Hastings et al., (Editors), John Wiley & Sons, Chichester, England,(1996), 248-252	
		LAMB, K A., "Effects of Differentiation on the Transcriptional Regulation of the FGF-4 Gene: Critical Roles Played by a Distal Enhancer", <u>Molecular Reproduction and Development</u> , 51(2), (1998), 218-224	
		LATHE, R., "Synthetic Oligonucleotide Probes Deduced From Amino Acid Sequence Data Theoretical and Practical Considerations", <u>Journal of Molecular Biology</u> , 183, (1985), 1-12	
		LEE, R. T., "Substrate-Binding Properties of Firefly Luciferase", <u>Archives of Biochemistry and Biophysics</u> , 141(1), (1970), 38-52	
		LEWIS, M. K., et al., "Efficient Site Directed <i>in vitro</i> Mutagenesis Using Ampicillin Selection", <u>Nucleic Acids Research</u> , 18(12), (1990), 3439-3443	
		LORENZ, W. W., et al., "Isolation and Expression of a cDNA Encoding <i>Renilla reniformis</i> Luciferase", <u>Proc. Nat. Acad. Sci. USA</u> , 88, (May, 1991), 4438-4442	
		LUCAS, M., et al., "Coelenterazine Is a Superoxide Anion-Sensitive Chemiluminescent Probe: Its Usefulness in the Assay of Respiratory Burst in Neutrophils", <u>Analytical Biochemistry</u> , 206(2), (November 1, 1992), 273-277	
		MANUKHOV, I. V., et al., "Cloning of the <i>Vibrio harveyi</i> luxA and luxB Genes and the Expression of Bioluminescence in <i>Escherichia coli</i> and <i>Bacillus subtilis</i> ", <u>Russian Biotechnology</u> , 1, (1996), 1-6	
		MARANVILLE, E. , et al., "Assessment of Amino-Acid Substitutions at Tryptophan 16 in $\alpha$ -galactosidase", <u>European Journal of Biochemistry</u> , 267(5), (2000), 1495-1501	
		MATSUMURA, I., et al., "Directed Evolution of the Surface Chemistry of the Reporter Enzyme $\beta$ -glucuronidase", <u>Nature Biotechnology</u> , 17, (July, 1999), 696-701	
		MATTHEWS, J , "Purification and Properties of <i>Renilla reniformis</i> Luciferase.", <u>Biochemistry</u> , 16(1), (January 11, 1977),85-91	

EXAMINER

DATE CONSIDERED

<p>Substitute for form 1449A/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (Use as many sheets as necessary)</p>		<i>Complete if Known</i>	
		<b>Application Number</b>	09/645,706
		<b>Filing Date</b>	August 24, 2000
		<b>First Named Inventor</b>	Wood, Keith
		<b>Group Art Unit</b>	1652
		<b>Examiner Name</b>	Prouty, Rebecca
Sheet 6 of 10		Attorney Docket No: 341.005US1	

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		MCELROY, W. D., "Factors Influencing the Response of the Bioluminescent Reaction to Adenosine Triphosphate", <u>Archives of Biochemistry and Biophysics</u> , 22, (1949), 420-433	
		MCELROY, W. D., et al., "Function of Adenosine Triphosphate in the Activation of Luciferin", <u>Archives of Biochemistry and Biophysics</u> , 64, (1956), 257-271	
		MCELROY, W. D., et al., "Mechanisms of Bioluminescent Reactions", In: <u>A Symposium on Light and Life</u> , McElroy, W. D., et al., Editors, (John Hopkins Press, 1961), 219-257	
		MCWHERTER, C. A., et al., "Scanning Alanine Mutagenesis and De-Peptidization of a <i>Candida albicans</i> Myristoyl-CoA: Protein N-Myristoyltransferase Octapeptide Substrate Reveals Three Elements Critical for Molecular Recognition", <u>Journal of Biological Chemistry</u> , 272(18), (1997), 11874-11880	
		MOUNT, S. M., "Genomic Sequence, Splicing, and Gene Annotation", <u>American Journal of Human Genetics</u> , 67(4), (2000), 788-792	
		MOYER, J. D., et al., "Nucleoside Triphosphate Specificity of Firefly Luciferase", <u>Analytical Biochemistry</u> , 131(1), (1983), 187-189	
		MURAKAMI, S., et al., "Bioluminescent Enzyme Immunoassay Using Thermostable Mutant Luciferase and Acetate Kinase as a Labelled Enzyme", <u>Analytica Chimica</u> , 361, (1998), 19-26	
		MURRAY, I. A., et al., "Steroid Recognition by Chloramphenicol Acetyltransferase: Engineering and Structural Analysis of a High Affinity Fusidic Acid Binding Site", <u>Journal of Molecular Biology</u> , 254 (1995), 993-1005	
		NIBU, Y., "A Cell Type-Dependent Enhancer Core Element is Located in Exon 5 of the Human Angiotensinogen Gene", <u>Biochemical Biophysical Research Communications</u> , 205(2), (1994), 1102-1108	
		OW, D. W., "Transient and Stable Expression of the Firefly Luciferase Gene in Plant Cells and Transgenic Plants", <u>Science</u> , 234(4778), (November 14, 1986), 856-859	
		PETIT, T., et al., "A Mutation Ser <sup>213</sup> /Asn in the Hexokinase 1 from <i>Schizosaccharomyces pombe</i> Increases Its Affinity for Glucoses", <u>Biochemical and Biophysical Research Communications</u> , 251(3), (October 29, 1998), 714-719	
		PINTO, M., et al., "Denaturation of Proteins During Heat Shock", <u>The Journal of Biological Chemistry</u> , 266(21), (1991), 13941-13946	
		PURDY, D., et al., "Heterologous Gene Expression in <i>Campylobacter coli</i> : The Use of Bacterial Luciferase in a Promoter Probe Vector", <u>FEMS Microbiology Letters</u> , 111(2-3), (August 1, 1993), 233-237	

EXAMINER

DATE CONSIDERED

Substitute for form 1449A/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (Use as many sheets as necessary)		Complete if Known <b>Application Number</b> 09/645,706 <b>Filing Date</b> August 24, 2000 <b>First Named Inventor</b> Wood, Keith <b>Group Art Unit</b> 1652 <b>Examiner Name</b> Prouty, Rebecca	
Sheet 7 of 10		Attorney Docket No: 341.005US1	

<b>OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS</b>				
Examiner Initials*	Cite No <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.		T <sup>2</sup>
		REESE, M G., "Large Scale Sequencing Specific Neural Networks for Promoter and Splice Site Recognition", <u>Biocomputing: Proceedings of the 1996 Pacific Symposium</u> , Hunter, L., et al., Editors, World Publishing Co., Singapore (Abstract Only), (1996), 1 pg.		
		REESE, M G., et al., "New Neural Network Algorithms for Improved Eukaryotic Promoter Site Recognition", <u>The Seventh International Genome Sequencing and Analysis Conference</u> , Hilton Head Island, South Carolina, (Abstract Only), (1995), 1 pg.		
		RHODES, W. C., "The Synthesis and Function of Luciferyl-adenylate and Oxyluciferyl-adenylate", <u>J. Biol. Chem.</u> , 233(6), (1958), 1528-1537		
		RIGGS, K. J., et al., "Common Factor 1 Is a Transcriptional Activator Which Binds in the <i>c-myc</i> Promoter, the Skeletal $\alpha$ -Actin Promoter, and the Immunoglobulin Heavy-Chain Enhancer", <u>Molecular and Cellular Biology</u> , 11(3), (March, 1991), 1765-1769		
		ROMMENS, J. M., et al., "cAMP-inducible Chloride Conductance in Mouse Fibroblast Lines Stably Expressing the Human Cystic Fibrosis Transmembrane Conductance Regulator", <u>Proc. Natl. Acad. Sci.</u> , 88, (1991), 7500-7504		
		ROSENDAHL, M. S., et al., "Dimensional Probing of the ATP Binding Site on Firefly Luciferase", <u>Photochemistry and Photobiology</u> , 35(6), (1982), 857-861		
		SAIKI, R. K., et al., "Primer-Directed Enzymatic Amplification of DNA with a Thermostable DNA Polymerase", <u>Science</u> , 239(4839), (January 29, 1988), 487-491		
		SAISANIT, S., "A Novel Enhancer, the Pro-B Enhancer, Regulates Id1 Gene Expression in Progenitor B Cells", <u>Mol. Cell. Biol.</u> , 15(3), (1995), 1513-1521		
		SALA-NEWBY, G., "Engineering a Bioluminescent Indicator for Cyclic AMP-Dependent Protein Kinase", <u>Biochemical Journal</u> , 279(Part 3), (November 1991), 727-732		
		SALA-NEWBY, G. B., et al., "Expression of Recombinant Firefly Luciferase in Prokaryotic and Eukaryotic Cells", <u>Biochemical Society Transactions</u> , 20, (1992), Pg. 143S		
		SALA-NEWBY, G. B., "Stepwise Removal of the C-Terminal 12 Amino Acids of Firefly Luciferase Results in Graded Loss of Activity", <u>Biochimica et Biophysica Acta (BBA) – Protein Structure and Molecular Enzymology</u> , 1206(1), (1994), 155-160		
		SCHMIDT, E. V., et al., "The Cytomegalovirus Enhancer: A Pan-Active Control Element in Transgenic Mice", <u>Molecular and Cellular Biology</u> , 10(8), (1990), 4406-4411		
		SCHUTTE, B., et al., "Optimized Conditions for Cloning PCR Products Into an XcmI T-Vector", <u>BioTechniques</u> , 22(1), (January, 1997), 40-42, 44		
		SELIGER, H. H., "The Colors of Firefly Bioluminescence: Enzyme Configuration and Species Specificity", <u>Proc. Natl. Acad. Sci., USA</u> , 52(1), (1964), 75-81		

EXAMINER

DATE CONSIDERED

Substitute for form 1449A/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (Use as many sheets as necessary)		<i>Complete if Known</i>	
		<b>Application Number</b>	09/645,706
		<b>Filing Date</b>	August 24, 2000
		<b>First Named Inventor</b>	Wood, Keith
		<b>Group Art Unit</b>	1652
		<b>Examiner Name</b>	Prouty, Rebecca
Sheet 8 of 10		Attorney Docket No: 341.005US1	

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		SENAPATHY, P. , et al., "[16] Splice Junctions, Branch Point Sites, and Exons: Sequence Statistics, Identification, and Applications to Genome Project", <u>Methods in Enzymology</u> , 183, (1990), 252-278	
		SEOL, J. H., et al., "Site-Directed Mutagenesis of the Cys Residues in ClpA, the ATPase Component of Protease Ti (SlpAP) in Escherichia coli", <u>Biological Chemistry</u> , 378(10), (Abstract Only), (1997), 1205-1209	
		SHERF, B. A., et al., "Dual-Luciferase™ Reporter Assay: An Advanced Co-Reporter Technology Integrating Firefly and <i>Renilla</i> Luciferase Assays", <u>Promega Notes Magazine</u> , Number 57, (1996), 7 pgs.	
		SIROT, D., et al., "A Complex Mutant of TEM-1 $\beta$ -Lactamase With Mutations Encountered in Both IRT-4 and Extended-Spectrum TEM-15, Produced by an <i>Escherichia coli</i> Clinical Isolate", <u>Antimicrobial Agents and Chemotherapy</u> , 41(6), (June, 1997), 1322-1325	
		SOMMER, J. M., "In Vivo Import of Firefly Luciferase into the Glycosomes of <i>Trypanosoma brucei</i> and Mutational Analysis of the C-Terminal Targeting Signal", <u>Molecular Biology of the Cell</u> , 3, (1992), 749-759	
		STAPLETON, P. D., "Construction and Characterization of Mutants of the TEM-1 $\beta$ -Lactamase Containing Amino Acid Substitutions Associated With Both Extended-Spectrum Resistance and Resistance to $\beta$ -Lactamase Inhibitors", <u>Antimicrobial Agents and Chemotherapy</u> , 43(8), (August, 1999), 1881-1887	
		STEMMER, W. P., et al., "DNA Shuffling by Random Fragmentation and Reassembly: <i>In vitro</i> Recombination for Molecular Evolution", <u>Proc. Natl. Acad. Sci. USA</u> , 91(22), (October 25, 1994), 10747-10751	
		STEWART, C. L., et al., "Expression of Retroviral Vectors in Transgenic Mice Obtain by Embryo Infection", <u>The EMBO Journal</u> , 6(2), (February, 1987), 383-388	
		STRAUSS, E. C., "In vivo Protein-DNA Interactions at Hypersensitive Site 3 of the Human $\beta$ -globin Locus Control Region," <u>Proc. Nat. Acad. Sci. USA</u> , 89, (July, 1992), 5809-5813	
		SZITTLER, R , et al., "Nucleotide Sequence, Expression, and Properties of Luciferase Coded by lux Genes from a Terrestrial Bacterium", <u>The Journal of Biological Chemistry</u> , 265(27), (September 25, 1990) 16581-16587	
		TARPEY, M. M., et al., "Chemiluminescent Detection of Oxidants in Vascular Tissue. Lucigenin But Not Coelenterazine Enhances Superoxide Formation", <u>Circulation Research</u> , 84(10), (May 28, 1999), 1203-1211	
		TERANISHI, K., "Coelenterazine Analogs as Chemiluminescent Probe for Superoxide Anion", <u>Analytical Biochemistry</u> , 249(1), (June 15, 1997), 37-43	
		VOLADRI, R. K. R., "Structure-Function Relationships Among Wild-Type Variants of <i>Staphylococcus aureus</i> $\beta$ -Lactamase: Importance of Amino Acids 128 and 216", <u>Journal of Bacteriology</u> , 178(24), (December, 1996), 7248-7253	

EXAMINER

DATE CONSIDERED

Substitute for form 1449A/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(Use as many sheets as necessary)</i>		<b>Complete if Known</b> <b>Application Number</b> 09/645,706 <b>Filing Date</b> August 24, 2000 <b>First Named Inventor</b> Wood, Keith <b>Group Art Unit</b> 1652 <b>Examiner Name</b> Prouty, Rebecca	
Sheet 9 of 10		Attorney Docket No: 341.005US1	

**OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		WADA, K.-N., et al., "Codon Usage Tabulated From the GenBank Genetic Sequence Data", <u>Nucleic Acids Research</u> , 20(Suppl.), (1992),2111-2118	
		WAGNER, E. F., et al., "Transfer of Genes Into Embryonal Carcimona Cells by Retrovirus Infection: Efficient Expression From an Internal Promoter", <u>The EMBO Journal</u> , 4(3), (March, 1985), 663-666	
		WALKER, D. E., et al., "An Aspartic Acid at Amino Acid 108 Is Required To Rescue Infectious Virus After Transfection of a Poliovirus cDNA Containing a CGDD but Not SGDD Amino Acid Motif in 3D <sup>pol</sup> ", <u>Journal of Virology</u> , 69(12), (1995), 8173-8177	
		WHITE, P J., et al., "Generation and Characterisation of a Thermostable Mutant of Luciferase from <i>Photinus Pyralis</i> ", In: <u>Bioluminescence and Chemiluminescence, Fundamentals and Applied Aspects, Proceedings of the 8th International Symposium on Bioluminescence and Chemiluminescence</u> , John Wiley & Sons, Cambridge, (September 1994), 419-422	
		WHITE, P. J., "Improved Thermostability of the North American Firefly Luciferase: Saturation Mutagenesis at Position 354", <u>Biochemical Journal</u> , 319 (Part 2), (October 15, 1996), 343-350	
		WOOD, K. V., "Bioluminescent Click Beetles Revisited", <u>Journal of Bioluminescence and Chemiluminescence</u> , 4(1), (July, 1989), 31-39	
		WOOD, K. V., "Complementary DNA Coding Click Beetle luciferases Can Elicit Bioluminescence of Different Colors", <u>Science</u> , 244(4905), (May 12, 1989), 700-702	
		WOOD, KEITH V., "Introduction to Beetle Luciferases and Their Applications", <u>Journal of Bioluminescence and Chemiluminescence</u> , 4, (July, 1989), 289-301	
		WOOD, K V., "Luc Genes: Introduction of Colour Into Bioluminescence Assays", <u>Journal of Bioluminescence and Chemiluminescence</u> , 5, (April, 1990), 107-114	
		WOOD, K. V., "Photographic Detection of Luminescence in <i>Escherichia coli</i> Containing the Gene for Firefly Luciferase", <u>Analytical Biochemistry</u> , 161(2), (March 1987), 501-507	
		WOOD, K. V., et al., "Synthesis of Active Firefly Luciferase by In Vitro Translation of RNA Obtained From Adult Lanterns", <u>Biochemical and Biophysical Research Communications</u> , 124(2), (October 30, 1984),592-596	
		WOOD, K. V., "The Chemical Mechanism and Evolutionary Development of Beetle Bioluminescence", <u>Photochemistry and Photobiology</u> , 62 (4), (1995) ,662-673	
		YANAI, K., et al. "A <i>cis</i> -acting DNA Element Located Between TATA box and Transcription Initiation site Is Critical in Response to Regulatory Sequences in Human Angiotensinogen Gene", <u>Journal of Biological Chemistry</u> , 271(27), (1996), 15981-15986	

EXAMINER

DATE CONSIDERED

Substitute for form 1449A/PTO			
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(Use as many sheets as necessary)</i>		<i>Complete if Known</i> <b>Application Number</b> 09/645,706 <b>Filing Date</b> August 24, 2000 <b>First Named Inventor</b> Wood, Keith <b>Group Art Unit</b> 1652 <b>Examiner Name</b> Prouty, Rebecca	
Sheet 10 of 10		Attorney Docket No: 341.005US1	

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		YE, L., "Cloning and Sequencing of a cDNA for Firefly Luciferase from <i>Photuris pennsylvanica</i> ", <u>Biochimica et Biophysica Acta</u> , 1339 (1), (April 25, 1997), 39-52	
		ZHANG, J.-H. , et al., "Directed Evolution of a Fucosidase From a Galactosidase by DNA Shuffling and Screening", <u>Proc.Natl. Acad. Sci. USA</u> , 94(9), (April 29, 1997), 4504-4509	
		ZHAO, H. , et al., "Functional and Nonfunctional Mutations Distinguished by Random Recombination of Homologous Genes", <u>Proc. Natl. Acad. Sci. USA</u> , 94(15), (July 22, 1997), 7997-8000	

---

EXAMINER

DATE CONSIDERED